

AMENDMENTS TO THE CLAIMS

1. (original) A method for backing up a primary logical unit within a data storage device, the primary logical unit and a backup logical unit together comprising a mirror-logical-unit pair, the method comprising:

receiving a trigger I/O request by the data storage device;

inserting a TRIGGER message corresponding to the I/O request into a queue that contains a portion of a sequenced stream of I/O requests directed to the primary logical unit;

de-queuing the TRIGGER message from the queue, and initiating a mirror split operation directed to the primary logical unit;

sending the TRIGGER message to the backup logical unit; and

after completion of the mirror split operation, maintaining the backup logical unit as a backup copy of the primary logical unit.

2. (original) The method of claim 1 wherein the backup logical unit is an active member of a pool of backup logical units managed by a controller of the data storage device.

3. Canceled

4. (original) The method of claim 1 wherein the backup logical unit is a primary backup logical unit associated with a pool of backup logical units including an active backup logical unit and inactive backup logical units.

5. (original) The method of claim 1 wherein the primary logical unit is associated with a local pool of backup logical units and with a remote primary backup logical unit associated with a remote pool of backup logical units.

6. (original) The method of claim 1 wherein the primary logical unit is distributed among multiple data storage devices.

7. (original) The method of claim 6 wherein the TRIGGER message is inserted into queues within the multiple data storage devices.

8. (original) The method of claim 1 wherein the backup logical unit is distributed among multiple data storage devices.

9. (original) The method of claim 8 wherein the TRIGGER message is inserted into queues within the multiple data storage devices.

10. (original) The method of claim 1 wherein the trigger I/O request is a special request comprising one of:

an I/O request transmitted to a special logical unit provided by the data storage device;

an I/O request transmitted to the primary logical unit by a special path;

a special TRIGGER I/O request transmitted to the primary logical unit; and

an I/O request transmitted to the data storage device on a separate communications medium.

11. Canceled

12. (currently amended) ~~The data storage device of claim 11 wherein the controller~~ A data storage device that provides efficient backup generation to an external program running on a host computer, the data storage device comprising:

a primary logical unit that, together with a backup logical unit, comprises a mirrored logical-unit pair; and

a controller that receives and recognizes a trigger I/O request directed to the primary logical unit, queues a TRIGGER message corresponding to the trigger I/O request in sequence with other received I/O requests, forwards the TRIGGER message to the backup logical unit in sequence with other received I/O requests forwarded by the controller to the

backup logical unit, and initiates a mirror split operation directed to the mirrored logical-unit pair when the TRIGGER message is de-queued by the controller for execution.

13. Canceled

14-17. Canceled.